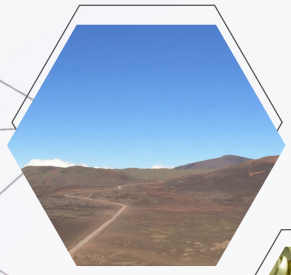
BOOK OF ABSTRACTS
POSTERS

Island BIOLOGY



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Experimental removal of dominant plants alters the diversity of a network of flower-visiting insects

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Plants form the base of complex communities on terrestrial ecosystems, and are the basic resource for insect herbivores and their associated natural enemies. Most plants contain flowers, and important interactions occur in these organs. Many insects are flower visitors and are known to be affected by habitat loss, fragmentation, and changes in landscape structure, but few studies have experimentally tested how habitat loss alters the structure of flower-visiting insect communities.In this study we focused on thrips (Insecta: Thysanoptera) as a model system. Previous studies in Reunion have revealed that flowers of the following exotic plants species host highly diverse communities of flower-visiting thrips : *Solanum mauritianum*, *Lantana camara*, *Ipomea indica*. Here, we tested the hypothesis that elimination of *S. mauritianum* flowers (as an important habitat for adult thrips) will trigger changes in thrips communities in the other two plants.We established replicated communities involving the three plants, and in a paired design, *S. mauritanicum* flowers were eliminated or not. The effect of this treatment on thrips was assessed during one month, by estimating their abundance, richness (i.e. the number of species) and diversity (shanon and simpson indexes). A community of eleven native and exotic thrips species was found. The treatment did not have any effect on insect abundance or diversity, but it had an effect on richness: elimination of *S. mauritianum* flowers had a negative effect on the richness of the number of species found on *L. camara,* but not on *I. indica.* At the landscape level, we observed that both the proportion of sugarcane and habitat fragmentation correlated with thrips richness. These correlations, however, were only observed when *S. mauritianum* flowers were eliminated, and not in our controls. Although our study was performed on exotic plant species, we provide evidence that at a fine spatial scale, the loss of a plant species that hosts a large diversity of flower-visiting insects can have consequences that cascade to the community of insects inhabiting other plants. Future studies are needed to unveil whether similar effects occur in communities of non-exotic plants, and to explore the consequences of habitat loss at a larger scale.

Keywords: flower visitors, thrips, habitat loss, insect diversity, habitat fragmentation

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